

WHAT IS CLAIMED IS:

1. A retroreflective article, comprising:
a body layer having a structured surface comprising recessed faces that define
5 cube corner cavities;
a reflective film disposed at least on the recessed faces; and
a transparent adhesive layer that fills the cube corner cavities.
2. The article of claim 1, wherein the adhesive layer comprises a transparent
10 pressure-sensitive adhesive.
3. The article of claim 1, wherein the adhesive layer comprises a transparent
heat-activated adhesive.
- 15 4. The article of claim 2, wherein the pressure-sensitive adhesive comprises a
crosslinked polymer.
5. The article of claim 1, wherein the adhesive layer is substantially coextensive
with the structured surface.
- 20 6. The article of claim 5, further comprising:
a release liner that contacts the adhesive layer.
7. The article of claim 5, further comprising:
25 a transparent cover layer that contacts and bonds to the adhesive layer.
8. The article of claim 7, wherein the transparent cover layer comprises a
thermoplastic polymer.
- 30 9. The article of claim 7, wherein the body layer comprises a thermoplastic
polymer.

10. The article of claim 7, wherein the adhesive layer has a lower elastic modulus than that of the body layer.
- 5 11. The article of claim 10, wherein the elastic modulus of the adhesive layer is less than about 345 MPa and the elastic modulus of the body layer is greater than about 690 MPa.
12. The article of claim 5, wherein the adhesive layer is substantially continuous
10 such that it covers both the cube corner cavities and upper portions of the structured surface.
13. The article of claim 1, wherein the reflective film is discontinuous.
- 15 14. The article of claim 1, wherein the body layer also has a rear surface opposite the structured surface, the article further comprising:
a second pressure-sensitive adhesive layer disposed at the rear surface.
15. A retroreflective article, comprising:
20 a body layer having a structured surface comprising recessed faces that define cube corner cavities;
a reflective film disposed at least on the recessed faces; and
a layer of flowable radiation-curable composition that fills the cube corner cavities.
- 25 16. The article of claim 15, wherein the composition layer is substantially coextensive with the structured surface.
17. The article of claim 16, wherein the composition layer covers substantially
30 all of the structured surface.

18. The article of claim 15, wherein the composition is substantially polymeric.

19. The article of claim 15, wherein the composition is suitable for forming a transparent pressure-sensitive adhesive.

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20. The article of claim 15, wherein the composition has a sufficiently low shrinkage such that upon curing it maintains intimate contact with the recessed faces.

10 21. The article of claim 15, wherein the reflective film is discontinuous, and the composition is suitable for forming a covalent bond with exposed portions of the body layer.

22. A method of making a cube corner article, comprising:
15 providing a body layer having a structured surface that includes recessed faces defining cube corner cavities;
applying a film of reflective material at least to the recessed faces;
applying to the structured surface a flowable composition suitable for forming a transparent pressure-sensitive adhesive; and
20 exposing the composition to radiation sufficient to crosslink the composition after the composition has filled the cube corner cavities.

23. The method of claim 22, further comprising:
providing a first cover layer; and
25 laminating the first cover layer to the article.

24. The method of claim 23, wherein the second applying step applies the composition at a thickness sufficient to form a composition layer covering the recessed faces and upper portions of the structured surface.

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25. The method of claim 24, wherein the first cover layer has the flowable composition applied thereto, and the second applying step is carried out by the laminating step.
- 5 26. The method of claim 23, wherein the first cover layer comprises a release liner that does not bond to the composition.
27. The method of claim 26, further comprising:
removing the release liner;
10 providing a second cover layer suitable for bonding to the composition; and
laminating the second cover layer to the composition.
28. The method of claim 22, wherein the second applying step is carried out such that the flowable composition incompletely fills the cube corner cavities.
- 15 29. The method of claim 28, further comprising:
providing a cover layer; and
laminating the cover layer to the article before the flowable composition has
filled the cube corner cavities.
- 20 30. The method of claim 22, wherein the flowable composition is at least 95% polymerized during the second applying step.
31. A method of making a cube corner article, comprising:
25 providing a body layer having a structured surface that includes recessed faces defining cube corner cavities;
applying a film of reflective material to the recessed faces;
applying to the structured surface a radiation-curable composition suitable for
bonding to the film of reflective material; and
30 exposing the composition to radiation sufficient to crosslink the composition after the composition has filled the cube corner cavities.

32. The method of claim 31, wherein the composition is suitable for forming a transparent pressure-sensitive adhesive.

- 5 33. The method of claim 31, further comprising:
providing a first cover layer; and
laminating the first cover layer to the composition.

34. The method of claim 31, wherein the second applying step applies the
10 composition at a thickness sufficient to form a composition layer covering both
the recessed faces and upper portions of the structured surface.

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